

Section 9

1999 Occupant Protection

1993 - 1999 Occupant Protection	9.2
1999 Seatbelt Use	9.3
1999 Seatbelt Use by Age and County.....	9.4
1999 Seatbelt Use by Gender, Age and Occupant Placement	9.6
1999 Children and Restraint Use.....	9.8
1999 Ejection by Seatbelt Use	9.9
1999 Air Bags.....	9.10
Safety Restraint Laws and Recommendations	9.11

TABLES

Table 9.01 Seatbelt Use by Age and County, Utah 1999

Table 9.02 Seatbelt Use by Gender, Utah 1999

Table 9.03 Seatbelt Use by Occupant Placement, Utah 1999

Table 9.04 Seatbelt Use by Age Group, Utah 1999

Table 9.05 Seating Location and Restraint Status of Children Under the Age of 9 Years, Utah 1999

Table 9.06 Percentage of Seatbelt Use for Occupants Whose Air Bag Deployed, Utah 1999

FIGURES

Figure 9.01 Percentage of Drivers and Front Seat Passengers Wearing Seatbelts in Crashes and Observational Studies, Utah 1993 - 1999

Figure 9.02 Seatbelt Use for All Occupants, Injured Occupants and Fatalities, Utah 1999

Figure 9.03 Ejection by Seatbelt Use, Utah 1999

Note:

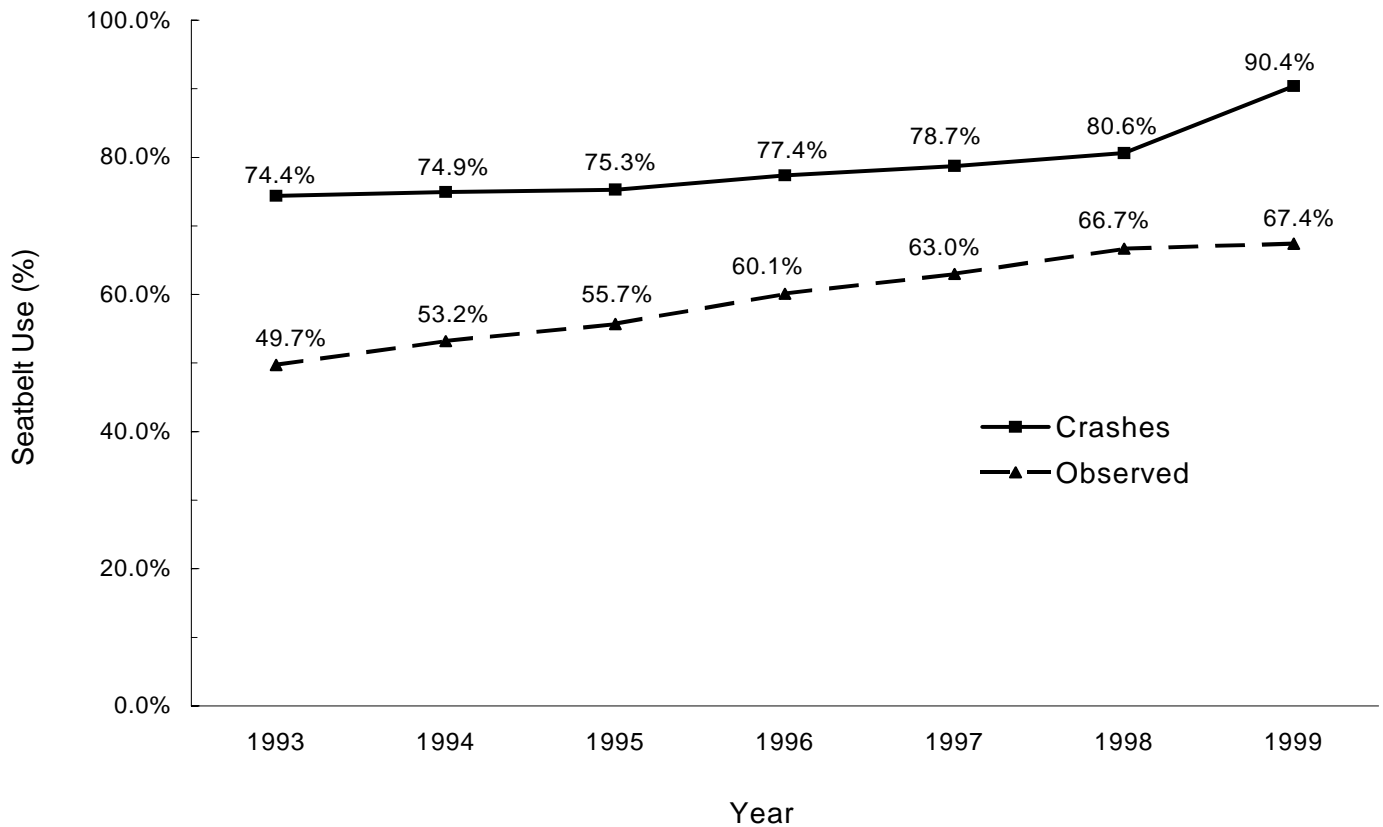
Seatbelt Use - Seatbelt use is reported for occupants in a passenger car, a light truck or van. Occupants are coded as wearing a seatbelt if they reported using a shoulder/lap belt, lap belt or a child safety seat (occupants using only a shoulder strap were reported to be unbelted). In the majority of cases, seatbelt use as recorded by the investigating officer is self-reported by the crash occupant. It is possible that crash occupants may report using a seatbelt when they were not, to avoid a citation or fine. In the case of fatal or severe injury crashes the officer will determine the seatbelt use.

Observational Study - Each year the Utah Department of Public Safety's Highway Safety Office conducts a seatbelt usage observational study. Study sites are located throughout the state where trained observers can record seatbelt use for drivers and front seat passengers of slow moving or stopped vehicles.

1993 - 1999 Occupant Protection

Figure 9.01 compares the percentage of seatbelt use reported in crashes to observational studies for drivers and front seat passengers. Seatbelt use by drivers and front-seat passengers has increased each year in both crashes and observational studies. The difference between crash seatbelt use rates reported by crash participants or the investigating officer at the crash scene, and observed seatbelt use rates, may be due to over-reporting of seatbelt use by crash participants at the scene of a crash.

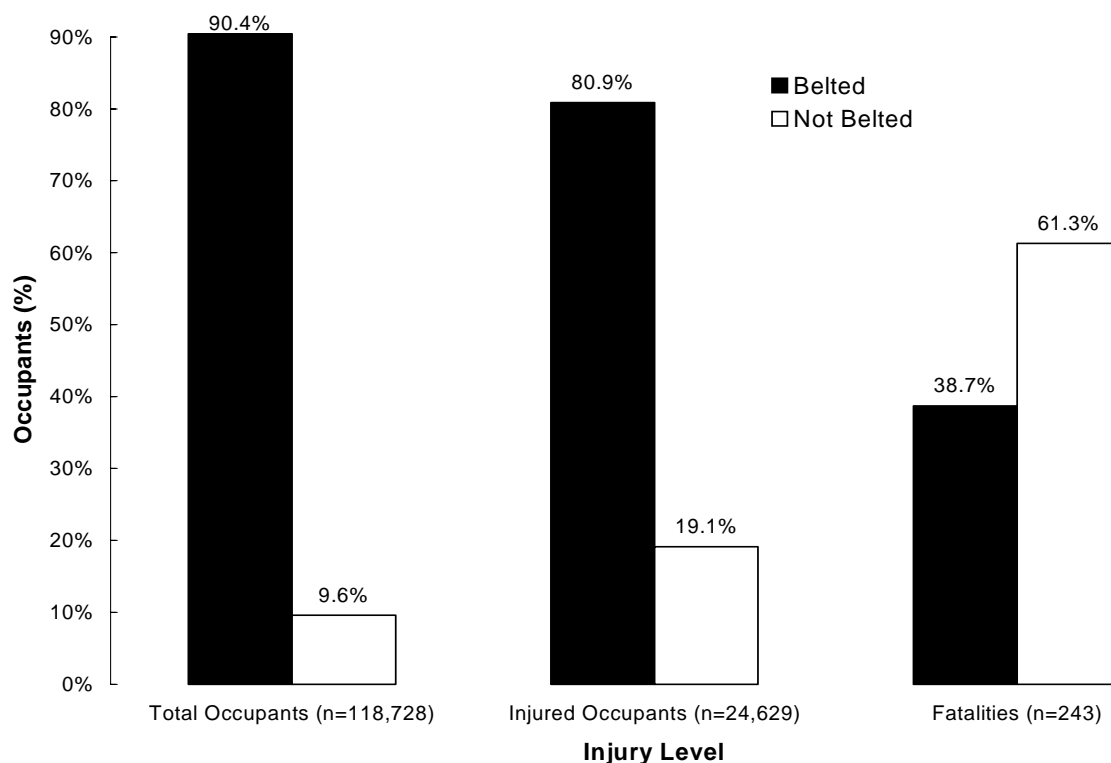
Figure 9.01 Percentage of Drivers and Front Seat Passengers Wearing Seatbelts in Crashes and Observational Studies, Utah 1993 - 1999



1999 Seatbelt Use

Statewide seatbelt use for all crash occupants (including back seat occupants) as reported to crash investigating officers is shown in Figure 9.02. The majority (90.4%) of occupants involved in a crash and the majority (80.9%) of the injured occupants reported using a seatbelt. Only one-third (38.7%) of the fatally injured occupants were belted. Seatbelts are an important safety feature; occupants who were not wearing a seatbelt were 14 times more likely to sustain a fatal injury than occupants who were wearing a seatbelt.

Figure 9.02 Seatbelt Use by Total Occupants, Injured Occupants, and Fatalities, Utah 1999



1999 Seatbelt Use by Age and County

Table 9.01 shows the self-reported seatbelt use of occupants by age and county. Davis County had the highest percentage of seatbelt use (94.1%), while Wayne had the lowest percentage of seatbelt use (66.9%).

Table 9.01 Seatbelt Use by Age and County, Utah 1999

County	Seatbelt Use	Age Group													Total Percent	
		00 - 04	05 - 09	10 - 14	15 - 19	20 - 24	25 - 29	30-39	40-49	50-59	60-69	70-79	80+	Unknown		
Beaver	Belted	18	25	27	62	62	46	70	55	36	30	15	1	1	448	84.7%
	Unbelted	4	2	3	25	11	8	11	7	3	1	4	1	1	81	15.3%
Box Elder	Belted	43	31	40	275	192	101	178	144	112	82	50	14	33	1,295	84.3%
	Unbelted	5	5	15	102	34	16	28	17	4	3	5	6	2	242	15.7%
Cache	Belted	172	106	157	1,131	846	387	505	424	224	141	117	39	50	4,299	86.4%
	Unbelted	13	22	22	217	147	65	79	46	19	18	15	5	6	674	13.6%
Carbon	Belted	17	9	21	155	77	42	73	76	61	13	28	12	11	595	85.1%
	Unbelted	3	3	2	48	20	7	7	3	5	1	4	1	0	104	14.9%
Daggett	Belted	1	2	1	6	4	4	4	5	3	3	2	0	2	37	82.2%
	Unbelted	0	0	1	4	0	0	1	0	0	2	0	0	0	8	17.8%
Davis	Belted	501	343	325	2,415	1,166	842	1,253	1,036	630	361	226	84	140	9,322	94.1%
	Unbelted	10	17	36	234	100	39	59	42	18	7	11	5	4	582	5.9%
Duchesne	Belted	18	19	24	83	43	22	54	63	49	20	8	1	1	405	77.7%
	Unbelted	4	2	8	33	19	8	16	6	9	2	2	3	4	116	22.3%
Emery	Belted	12	11	15	65	75	31	52	37	18	17	10	3	6	352	76.4%
	Unbelted	1	8	6	52	12	4	12	2	6	3	2	1	0	109	23.6%
Garfield	Belted	7	14	10	30	23	23	42	37	21	16	9	2	5	239	86.3%
	Unbelted	0	1	8	11	3	2	6	5	1	0	0	1	0	38	13.7%
Grand	Belted	17	7	12	45	52	32	56	46	28	19	9	0	6	329	76.5%
	Unbelted	4	2	2	36	20	10	11	9	4	0	2	0	1	101	23.5%
Iron	Belted	94	70	52	285	270	111	200	148	127	69	42	24	13	1,505	80.4%
	Unbelted	8	18	32	115	69	22	29	33	10	15	10	1	4	366	19.6%
Juab	Belted	23	22	23	95	81	43	73	35	37	31	22	4	5	494	82.6%
	Unbelted	4	3	7	29	14	8	12	8	6	8	2	2	1	104	17.4%
Kane	Belted	10	8	17	55	35	26	42	39	48	18	16	1	13	328	88.2%
	Unbelted	0	3	4	13	9	1	3	4	2	2	2	1	0	44	11.8%
Millard	Belted	42	23	33	113	100	59	75	91	59	27	29	7	14	672	84.4%
	Unbelted	1	4	5	42	20	7	12	13	8	5	4	1	2	124	15.6%

Table 9.01 Seatbelt Use by Age and County, Utah 1999 (continued)

County	Seatbelt Use	Age Group													Total	Percent
		00 - 04	05 - 09	10 - 14	15 - 19	20 - 24	25 - 29	30-39	40-49	50-59	60-69	70-79	80+	Unknown		
Morgan	Belted	0	6	3	52	16	5	25	25	22	12	5	6	4	181	86.6%
	Unbelted	2	2	1	12	2	2	3	2	1	1	0	0	0	28	13.4%
Piute	Belted	1	3	2	9	5	4	4	4	3	4	2	2	0	43	79.6%
	Unbelted	0	2	0	4	0	1	2	1	1	0	0	0	0	11	20.4%
Rich	Belted	6	12	6	42	10	12	23	11	9	2	5	1	3	142	87.1%
	Unbelted	1	0	0	11	3	3	1	0	2	0	0	0	0	21	12.9%
Salt Lake	Belted	2,341	1,654	1,491	10,596	8,225	5,533	8,278	6,576	3,633	1,850	1,228	463	730	52,598	92.9%
	Unbelted	65	122	150	1,170	774	415	545	341	188	84	55	26	85	4,020	7.1%
San Juan	Belted	14	8	14	52	46	41	61	58	38	31	15	4	10	392	79.7%
	Unbelted	1	3	4	38	16	13	8	4	6	2	2	2	1	100	20.3%
Sanpete	Belted	21	16	28	125	83	40	59	53	40	26	21	8	7	527	74.6%
	Unbelted	6	13	12	59	30	11	14	7	10	3	5	4	5	179	25.4%
Sevier	Belted	27	28	30	125	75	53	109	95	62	48	27	10	13	702	75.7%
	Unbelted	5	4	7	96	44	16	17	16	6	4	4	4	2	225	24.3%
Summit	Belted	33	30	33	210	169	118	223	185	96	57	14	12	21	1,201	90.3%
	Unbelted	5	5	1	29	26	17	23	10	6	3	0	0	4	129	9.7%
Tooele	Belted	45	33	37	198	130	91	138	132	57	50	33	12	20	976	85.0%
	Unbelted	1	2	4	59	32	12	28	11	9	5	3	2	4	172	15.0%
Uintah	Belted	40	27	34	227	73	60	84	73	44	31	21	16	16	746	80.7%
	Unbelted	2	8	6	91	22	8	19	6	6	1	3	4	2	178	19.3%
Utah	Belted	947	527	493	3,723	3,573	1,821	2,021	1,652	943	500	405	175	203	16,983	89.4%
	Unbelted	38	43	111	692	439	175	215	120	71	32	26	12	32	2,006	10.6%
Wasatch	Belted	39	35	19	157	112	68	141	83	81	25	20	7	26	813	87.4%
	Unbelted	3	1	7	37	23	14	9	2	5	1	3	5	7	117	12.6%
Washington	Belted	211	133	137	888	445	266	369	357	267	169	193	84	68	3,587	86.7%
	Unbelted	15	13	17	221	104	36	56	42	11	15	14	7	1	552	13.3%
Wayne	Belted	0	2	0	15	10	8	17	6	14	1	1	1	6	81	66.9%
	Unbelted	0	1	2	21	6	1	1	2	0	0	3	1	2	40	33.1%
Weber	Belted	297	183	189	1,848	1,228	773	1,134	980	535	347	303	139	100	8,056	89.9%
	Unbelted	8	25	39	306	161	95	125	67	30	19	17	9	8	909	10.1%
Statewide	Belted	4,997	3,387	3,273	23,082	17,226	10,662	15,363	12,526	7,297	4,000	2,876	1,132	1,527	107,348	90.4%
	Unbelted	209	334	512	3,807	2,160	1,016	1,352	826	447	237	198	104	178	11,380	9.6%

1999 Seatbelt Use by Gender, Age and Occupant Placement

Female and male crash occupants reported similar seatbelt use (approximately 90%). For injured occupants and fatally injured occupants, the reported seatbelt use was greater for females than males. However, the reported seatbelt use for fatalities was almost half of that for total crash occupants regardless of gender (Table 9.02).

Table 9.02 Seatbelt Use by Gender, Utah 1999

Gender	Seatbelt Status	Total Occupants		Injured Occupants		Fatalities	
		#	%	#	%	#	%
Female	Belted	50,761	91.5%	11,682	83.8%	44	48.4%
	Unbelted	4,690	8.5%	2,265	16.2%	47	51.6%
Male	Belted	56,519	89.4%	8,230	77.1%	50	32.9%
	Unbelted	6,682	10.6%	2,443	22.9%	102	67.1%
Total	Belted	107,280	90.4%	19,912	80.9%	94	38.7%
	Unbelted	11,372	9.6%	4,708	19.1%	149	61.3%
Grand Total		118,652	100.0%	24,620	100.0%	243	100.0%

Reported seatbelt use did not vary substantially by seating location (Table 9.03). Among total occupants and injured occupants, drivers reported the highest seatbelt use compared to other seating locations. For fatally injured occupants, back seat passengers reported the highest seatbelt use.

Table 9.03 Seatbelt Use by Occupant Placement, Utah 1999

Placement	Seatbelt Status	Total Occupants		Injured Occupants		Fatalities	
		#	%	#	%	#	%
Driver	Belted	74,528	91.8%	13,553	84.3%	66	41.3%
	Unbelted	6,651	8.2%	2,517	15.7%	94	58.8%
Front Seat Passenger	Belted	19,624	86.8%	4,377	74.9%	17	29.3%
	Unbelted	2,989	13.2%	1,466	25.1%	41	70.7%
Back Seat Passenger	Belted	13,196	88.4%	1,988	73.2%	11	44.0%
	Unbelted	1,740	11.6%	728	26.8%	14	56.0%
Total Belted		107,348	90.4%	19,918	80.9%	94	38.7%
Total Unbelted		11,380	9.6%	4,711	19.1%	149	61.3%
Grand Total		118,728	100.0%	24,629	100.0%	243	100.0%

Seatbelt use varied slightly by age (Table 9.04). For total occupants, children under the age of 5 years had the highest rate of reported seatbelt use (96.0%), whereas, the age group 10 to 14 years and teenagers aged 15 to 19 years reported the lowest percentage of seatbelt use (86.5% and 85.8%). Among injured occupants, the age group 65 to 69 years reported the highest seatbelt use and those aged 10 to 14 years reported the lowest. For fatally injured occupants, children under the age of 5 years were reported to have the highest seatbelt use and those aged 15 to 19 years the lowest.

Although the reported seatbelt or child safety seat use rate for children under the age of 10 years was often one of the highest for all age groups, it does not indicate that children were properly restrained. Unfortunately, several statewide surveys have found that child safety seats are often placed incorrectly in vehicles. In addition, young children are often moved to adult sized seatbelts prematurely when a booster seat is more appropriate. (see page 9.11 for Safety Recommendations).

Table 9.04 Seatbelt Use by Age Group, Utah 1999

Age Category	Total Occupants		Injured Occupants		Fatalities	
	Total	% Belted	Total	% Belted	Total	% Belted
00 - 04	5,206	96.0%	626	83.7%	7	71.4%
05 - 09	3,721	91.0%	733	76.7%	6	66.7%
10 - 14	3,785	86.5%	942	67.1%	6	50.0%
15 - 19	26,889	85.8%	5,602	68.4%	39	12.8%
20 - 24	19,386	88.9%	3,925	78.4%	27	37.0%
25 - 29	11,678	91.3%	2,529	81.7%	17	23.5%
30 - 34	8,544	91.5%	1,858	84.1%	15	40.0%
35 - 39	8,171	92.3%	1,825	82.4%	19	36.8%
40 - 44	7,343	93.4%	1,581	85.9%	15	26.7%
45 - 49	6,009	94.4%	1,344	85.1%	9	44.4%
50 - 54	4,486	94.1%	981	89.0%	12	41.7%
55 - 59	3,258	94.4%	668	88.9%	12	33.3%
60 - 64	2,376	94.4%	514	87.5%	9	55.6%
65 - 69	1,861	94.4%	444	92.1%	4	50.0%
70 - 74	1,740	94.1%	375	85.3%	8	62.5%
75 - 79	1,334	92.9%	317	84.5%	14	57.1%
80 - 84	846	92.4%	192	89.1%	4	50.0%
85 +	390	89.7%	112	88.4%	5	20.0%
Missing	1,705	89.6%	388	78.9%	1	0.0%
Grand Total	118,728	90.4%	24,956	79.1%	229	36.7%

1999 Children and Restraint Use

The proportion of children under the age of 9 years who were reported as unbelted increased with increasing age (Table 9.05). The majority of children under the age of 2 years (81.5%) were in child safety seats at the time of the crash, compared to 46.9% of children aged 2 to 4 years. Children under the age of 2 years were 5 times more likely to be in a child safety seat than children between the ages of 2 to 4 years. The majority (91.4%) of children between the ages 5 to 8 years were belted or in a child safety seat. Child safety seat usage was highest for children in the back seat; children in the back seat were 3 times more likely to be in a child safety seat than children in the front seat.

Utah's Child Restraint Law requires all children under the age of 19 years to be properly restrained when riding in a motor vehicle. In addition, children under the age of 4 years must be restrained in a child safety seat (see page 9.11 for Safety Laws and Recommendations).

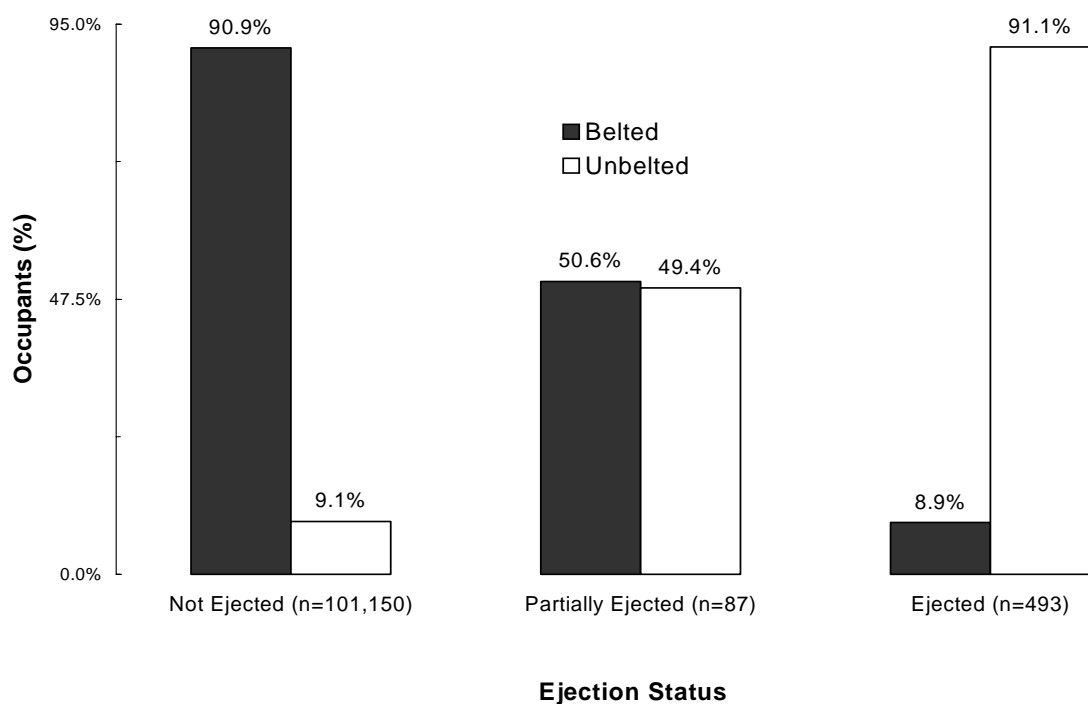
Table 9.05 Seating Location and Restraint Status for Children Under Age 9 Years, Utah 1999

Seating Location Seatbelt Status		Ages 0 - 1		Ages 2 - 4		Ages 5 - 8		Total
		#	%	#	%	#	%	
Front Middle	Child Safety Seat	44	63.8%	32	19.6%	3	2.1%	76
	Other Belted	13	18.8%	108	66.3%	106	72.6%	121
	Unbelted	12	17.4%	23	14.1%	37	25.3%	35
Front Right	Child Safety Seat	134	80.7%	114	28.6%	18	2.6%	248
	Other Belted	27	16.3%	238	59.6%	617	88.6%	265
	Unbelted	5	3.0%	47	11.8%	61	8.8%	52
Back Seat	Child Safety Seat	1,413	82.3%	1,374	51.2%	133	6.1%	2,787
	Other Belted	271	15.8%	1,218	45.4%	1,890	86.5%	1,489
	Unbelted	32	1.9%	89	3.3%	162	7.4%	121
Total	Child Safety Seat	1,591	81.5%	1,520	46.9%	154	5.1%	3,111
	Other Belted	311	15.9%	1,564	48.2%	2,613	86.3%	1,875
	Unbelted	49	2.5%	159	4.9%	260	8.6%	208
Grand Total		1,951	100.0%	3,243	100.0%	3,027	100.0%	8,221

1999 Ejection by Seatbelt Use

Figure 9.03 shows an inverse relationship between ejection from a motor vehicle and seatbelt use. The majority (91.1%) of the occupants ejected from a motor vehicle were not reported to be using a seatbelt, compared to only 9.1% of occupants not ejected from a motor vehicle.

Figure 9.03 Ejection by Seatbelt Use, Utah 1999



1999 Air Bags

Table 9.06 shows the age of occupants whose air bag deployed and the percentage belted. Regardless of crash severity, the majority of occupants whose air bag deployed were wearing a seatbelt.

Table 9.06 Percentage of Seatbelt Use for Occupants Whose Air Bag Deployed, Utah 1999

Age Category	Total Occupants		Injured Occupants		Fatalities	
	Total	% Belted	Total	% Belted	Total	% Belted
00 - 04	10	70.0%	3	66.7%	0	0.0%
05 - 09	12	66.7%	6	66.7%	0	0.0%
10 - 14	27	85.2%	21	85.7%	1	0.0%
15 - 19	366	79.8%	228	77.2%	2	0.0%
20 - 24	316	84.5%	196	80.1%	3	0.0%
25 - 29	192	87.5%	111	83.8%	0	0.0%
30 - 34	111	86.5%	69	82.6%	1	0.0%
35 - 39	112	90.2%	76	89.5%	1	0.0%
40 - 44	101	90.1%	63	88.9%	3	66.7%
45 - 49	78	93.6%	53	90.6%	1	100.0%
50 - 54	50	94.0%	34	97.1%	1	100.0%
55 - 59	54	94.4%	39	92.3%	2	100.0%
60 - 64	49	98.0%	33	97.0%	1	100.0%
65 - 69	26	92.3%	16	87.5%	1	100.0%
70 - 74	39	71.8%	32	71.9%	1	0.0%
75 - 79	26	92.3%	21	90.5%	1	0.0%
80 - 84	22	95.5%	11	90.9%	0	0.0%
85 +	8	87.5%	6	83.3%	0	0.0%
Missing	14	64.3%	12	58.3%	0	0.0%
Grand Total	1,613	85.9%	1,030	83.3%	19	63.2%

Safety Restraint Laws And Recommendations

Safety Restraint Use Law

Utah law requires all drivers and front seat passengers to be wearing a seatbelt when traveling in a motor vehicle. The purpose of this law is to protect Utahns from needless death and injury and reduce taxpayer costs resulting from traffic collisions. The law is a secondary law which means a person may be issued a citation only when the police officer has stopped the vehicle for another reason. Any person who violates this law is subject to a fine of \$45, reduced to \$15 upon completion of a traffic safety educational class. Exceptions to the law include, delivery personnel, rural letter carriers, persons driving vehicles used for farm purposes, individuals in motor vehicles manufactured before July 1, 1966, and individuals with physically disabling or medical condition which would prevent appropriate use of a safety belt. Visitors from outside Utah are also required to wear a seatbelt when traveling in Utah.

Child Passenger Safety Law

All children under the age of 19 years must be properly restrained in a motor vehicle. Children under the age of 4 years must ride in an approved child safety seat and children aged 4 to 19 years must ride in an approved child safety seat or seatbelt. This is a primary law which means a law enforcement officer can stop a vehicle if he/she notices children are not properly restrained. A fine can be issued solely for not restraining a child under the age of 19 years and violators will be subject to a fine of not more than \$75. The first offense shall be dismissed if the driver shows proof of acquiring a child safety seat or seatbelt. The driver is responsible for unrestrained occupants in the vehicle under the age of 16, whether or not they are the parents of the unrestrained child.

Child Safety Seat Recommendations

- Infants should be placed in a rear facing child safety seat until they are at least 20 pounds AND 1 year of age.
- Children over 1 year of age weighing 20 - 40 pounds should ride in forward facing child safety seats.
- Older children (approximately 4-8 years of age) should ride in belt-positioning booster seats until they are approximately 60 - 80 pounds and can use an adult-size lap and shoulder belt system.
- Avoid using secondhand child safety seats especially if it does not have the original instruction booklet, if it has been used in a crash, if it does not have the manufacturer's date and model number on it or if it is more than six years old.
- If your car has lap/shoulder combination belts, it could be critical to use a locking clip to properly secure your safety seat to the car. Consult the vehicle owner's manual.
- The safest place for any child age 12 and under is in the back seat of the vehicle.
- Children should never be held on an adult's lap. The force of the collision would tear a child from the adult's arms. If the adult is not wearing a safety belt, the child could be crushed between the adult's body and the dashboard.

Seatbelt Recommendations

- Always use both the lap and shoulder belt. When worn properly, the shoulder belt should fit across the collar bone and the lap belt should fit low over the hips.
- Never place the shoulder strap under your arm or behind your back.
- Use belt-positioning booster seats for children who have outgrown their toddler safety seat (at about 4 years of age and 40 pounds). Booster seats help position an adult-size seatbelt for a safer fit on children.

Air Bag Safety Recommendations

- NEVER place a rear facing child safety seat in the front seat of a vehicle with a passenger side air bag.
- Place children age 12 years and younger in the back seat in an age and size-appropriate child safety seat or seatbelt.
- If you are the driver, keep 10 - 12 inches between you and the steering wheel.
- Move the front passenger seat as far back as possible.
- Shorter drivers, who cannot get 10 inches from the steering wheel and still comfortably reach the pedals can purchase pedal extender (call (813) 932-8566 for more information).
- Air bags are "supplemental" to seatbelts. Be sure you and your passengers use both the lap and shoulder portion of the seatbelt and children ride in appropriate child safety restraints in the back seat.
- If you MUST disconnect your vehicle's air bag contact Utah Highway Safety at (801) 293 -2480 or log onto the National Highway Traffic Safety Administration website at <http://www/nhtsa.dot.gov> for information.